

R E M A R K S

The office action of November 24, 2010 has been reviewed and its contents carefully noted. Reconsideration of this case, as amended, is requested. Claims 10 through 13 remain in this case.

Rejection under 35 U.S.C. §112

Claims 10, 11 and 13 are rejected under 35 USC 112, first paragraph, as failing to comply with the written description requirement, and coincidentally, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicants regard as the invention. Applicants herein amend these claims by deleting the phrase “to enzymatically enhance an oxygen reduction reaction”. Support for this amendment is to be found on page 17, lines 24-27 of the substitute specification submitted on 3 February 2005. As amended, the claim language does not describe the “coating material” as an enzyme. Rather, it is the cathode electrode that acts as a catalyst, not the coating. The coating material acts as a permeable membrane (paragraph bridging pages 17 and 18). Accordingly, the reconsideration and withdrawal of this rejection is respectfully requested.

Rejection under 35 U.S.C. §103

Claim 10 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Rasor et al. (3,943,936) in view of Heller (6,294,281). Applicants respectfully traverse.

Rasor et al. describe pacemakers that are inserted by “transvenous or transarterial [means] into the heart” (col. 1, lines 25-26). The patentees only refer to the use of a catheter to remove worn or failed pacemakers and only by intravenous insertion of the catheter into the body. In contrast, each of Applicants ultra miniature pacemakers is *inserted and removed* by using a catheter.

The claimed subject matter is for an “integrated” cardiac pacemaker. This means that each ultra miniature pacemaker is meant to be linked to at least one other ultra miniature pacemaker. As described in sections “c” of each of claims 10, 11, 12 and 13, each ultra miniature pacemaker receives a “plurality of electrocardiographic information”, which are provided by other “integrated” pacemaker units. In contrast, Rasor et al. describe a “self contained unit” (col. 4, line 8) or one that is “fully self-contained” (col. 2, line 68 to col. 3, line 1). It is readily apparent that the pacemaker of Rasor et al. is not intended to be “integrated” with other pacemaker units.

Rasor et al. disclose that their cardiac pacemakers use a power source that is derived from the transformation of “hemodynamic pressure into electric energy by means of a suitable transducer” (col. 2, lines 49-50) and discredit energy derived from “heart movement” (col. 1, line 21 and col. 2, lines 34-36). Since Rasor et al. disclose a power source quite different from one that is derived from the extraction of electrons by the oxidative reactions of biological fluids, i.e., a “chemical” reaction, one skilled in the art would not be inclined to replace the power source of the cited reference with that of Heller. It is respectfully submitted that such a result is not obvious from the combined teachings of these two references.

Heller further discloses biological fuel cells which use spacers to separate the anode from the cathode. Various types of spacers are shown in Figs. 1-5 and are numerically identified as “103”, “203”, “303”, “403” and “503”, respectively. In contrast, Applicants ultra miniature cardiac pacemakers do not require independent spacers to separate the anode from the cathode. The above amendment of claims 10 - 13 replaces “comprises” to “consists of” when describing the components of Applicants’ biological fuel cell. The components of the fuel cell are therefore limited to the anode and cathode. A spacer is not part of Applicants’ fuel cell. It is respectfully submitted that it would not have been obvious for one skilled in the art to have replaced the hemodynamic energy source of Rasor et al. with the spacer containing biological fluid

energy source of Heller. For the foregoing reasons, Applicants respectfully request the reconsideration and withdrawal of this rejection.

Claims 11-13 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Rasor et al. in view of Heller and Fujii et al. (5,411,535). Applicants respectfully submit that the addition of Fujii et al. fail to overcome the deficiencies in the recited grounds of rejection based on the combined teachings of Rasor et al. and Heller. Applicants respectfully request the reconsideration and withdrawal of this rejection.

Conclusion

Applicant believes the claims, as amended, are patentable over the prior art, and that this case is now in condition for allowance of all claims therein. Such action is thus respectfully requested. If the Examiner disagrees, or believes for any other reason that direct contact with Applicants' attorney would advance the prosecution of the case to finality, he is invited to telephone the undersigned at the number given below.

"Recognizing that Internet communications are not secured, I hereby authorize the PTO to communicate with me concerning any subject matter of this application by electronic mail. I understand that a copy of these communications will be made of record in the application file."

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